

CLAIMS

1. A communication control method for a network having a data source and a transmission facility subdivided into a plurality of channels, said method comprising the steps of:

5 determining a subset of said plurality of channels which said data source is allowed to seize;

transforming a data stream originating from said data source into a format permitting
10 concurrent transmission over said subset of said channels; and

transmitting the transformed data stream concurrently over said subset of said channels.
- 15 2. The communication control method of claim 1, wherein said step of transforming said data stream is performed in such a way as to enable utilizing a maximum transmission rate characteristic for each of said channels.
- 20 3. The communication control method of claim 1, further including the step of redistributing said transformed data stream among a reduced subset of said channels if during transmission of said transformed data stream one or more channels of said subset of said channels become unavailable.
- 25 4. The communication control method of claim 1, further including the step of redistributing said transformed data stream among an extended subset of said channels if during transmission of said transformed data stream one or more additional channels become available.
- 30 5. The communication control method of claim 1, wherein said step of determining a subset of said plurality of channels includes the step of looking up data in a table containing information about said data source.

6. The communication control method of claim 5, wherein said information about said data source includes a maximum number of channels to seize.
- 5 7. The communication control method of claim 5, wherein said information about said data source includes a data source's priority of sending data over said transmission facility.
8. The communication control method of claim 5, wherein said information about said data source includes a maximum bit rate said data source can enter into said network.
- 10 9. The communication control method of claim 1, wherein said step of determining a subset of said plurality of channels includes the step of looking up data in a table containing information about said transmission facility.
- 15 10. The communication control method of claim 9, wherein said information about said transmission facility includes an overall number of channels.
- 20 11. The communication control method of claim 9, wherein said information about said transmission facility includes a maximum transmission rate of each channel.
12. The communication control method of claim 9, wherein said step of determining a subset of said plurality of channels includes the step of examining the condition of said plurality of channels.
- 25 13. The communication control method of claim 12, wherein said step of examining said condition of said plurality of channels includes the steps of finding free channels and checking the priority of information currently transmitted over busy channels.

14. The communication control method of claim 13, wherein said step of determining a subset of said plurality of channels includes the step of selecting one or more of said busy channels to take over control for transmitting data if said priority of information currently transmitted has got a lower priority.

15. The communication control method of claim 1, wherein said step of transforming said data stream includes the step of buffering said data stream.

16. The communication control method of claim 1, wherein said step of transforming said data stream includes the step of creating data packets containing said information of said data stream.

17. The communication control method of claim 1, wherein said step of transmitting said transformed data stream includes the step of utilizing standard network protocols.

18. A computer program product stored on a computer usable medium, comprising computer readable program means for causing a computer to perform the method of claim 1.

19. A communication control device for a network having a data source and a transmission facility subdivided into a plurality of channels, said device comprising:

a bus access controller for determining a subset of said plurality of channels which said data source is allowed to seize;

a bus channel control for transforming a data stream originating from said data source into a format permitting concurrent transmission over said subset of said channels; and

a multiplexing unit for transmitting the transformed data stream concurrently over said subset of said channels.

20. The communication control device of claim 19, further including a configuration register containing information about said data source.
21. The communication control device of claim 20, wherein said information about said data source includes a maximum number of channels to seize.
22. The communication control device of claim 20, wherein said information about said data source includes a data source's priority of sending data over said transmission facility.
23. The communication control device of claim 20, wherein said information about said data source includes a maximum bit rate the data source can enter into said network.
24. The communication control device of claim 20, wherein said configuration register further contains information about said transmission facility
25. The communication control device of claim 24, wherein said information about said transmission facility includes an overall number of channels.
26. The communication control device of claim 24, wherein said information about said transmission facility includes a maximum transmission rate of each channel.
27. The communication control device of claim 19, wherein said bus access controller for determining a subset of said plurality of channels includes an arbitration controller for scheduling transmission requests.
28. The communication control device of claim 19, further including buffers for transforming said data to be concurrently transmitted over a specified number of channels.